## Serial Number 09/749,782

## AMENDMENTS TO SPECIFICATION

## Page 12, line 11 to Page 13, line 3:

Assuming that a codebook vector of an index (k) is  $c_k$ , an optical optimal code vector is selected as a codebook vector, which maximizes the following Formula 8.

[Equation 8]

$$T_k = \frac{C_k^2}{E_k} = \frac{(d^T c_k)^2}{c_k^T \Phi c_k}$$

in which  $\mathbf{d}$  is a correlation vector between the object signal  $\mathbf{x}'(\mathbf{n})$  and an impulse response  $\mathbf{h}(\mathbf{n})$  of a composite filter, and  $\Phi$  is a correlation matrix with  $\mathbf{h}(\mathbf{n})$ . That is,  $\mathbf{d}$  and  $\Phi$  are represented with the following Formulas 9 and 10.

[Formula 9]

$$d(n) = \sum_{i=n}^{39} x'(i)h(i-n) \qquad i = 0, 1, ..., 39$$

[Formula 10]

$$\Phi(i,j) = \sum_{n=j}^{39} h(n-i)h(n-j) \qquad i = 0,...,39 ; j = i,....39.$$